AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) An apparatus for tuning an optical element, the apparatus comprising:

a filter module that contains a thin-film filter having a specified response at a first location and a second response at a second location, wherein a first end of the filter module has a convex surface configured to fit with a concave surface of a second optical module, wherein the thin-film filter has an axis that is offset from a center of rotation of the filter module such that either the specified response or the second response of the thin film filter can be selected as the filter module is rotated about the center of rotation; ~~such that a plane formed by a face of the thin film filter can be aligned with respect to a first axis passing through the thin film filter and such that the thin film filter can be rotated about the first axis;~~ and

a mechanism for redirecting incident light to a second location on the filter module so as to achieve ~~a desired~~ the second response other than said specified response.

2. (Previously Presented) The apparatus of claim 1, wherein said specified response comprises a center wavelength of said thin-film filter.

3. (Original) The apparatus of claim 1, wherein said redirecting mechanism comprises a pigtail having a wedge in a transmitting end of said pigtail.

4. (Original) The apparatus of claim 3, wherein said wedge comprises an angle between approximately 8° and 12°.

5. (Currently Amended) The apparatus of claim 1, wherein said incident light is redirected along a path offset from an axis formed by the center of rotation of said filter module. ~~optical element.~~

6. (Currently Amended) An apparatus for tuning an optical element, the apparatus comprising:

a module having a center of rotation and an end having a concave surface;

an optical element ~~having a center of rotation and~~ being affixed to said module such that an axis of ~~said center of rotation of~~ said optical element is offset from said center of rotation of said module, wherein said optical element has an end having a convex surface that fits with the concave surface of the module such that the optical element can be ~~moved with two degrees of freedom~~ rotated about said center of rotation of said optical element while maintaining contact between the convex surface of the optical element and the concave surface of the module, wherein said axis of said optical element enables light to be directed to one or more locations on said optical element as said optical element rotates about said center of rotation of the module; and

a mechanism for redirecting light, said mechanism including a pigtail having a wedge formed in a transmitting end, wherein said redirecting mechanism redirects incident light to a particular location ~~a location~~ on said optical element.

7. (Cancelled)

8. (Original) The apparatus of claim 6, wherein said wedge comprises an angle between approximately 8° and 12°.

9. (Currently Amended) The apparatus of claim 6, wherein said particular location on said optical element is a location other than said ~~center of rotation~~ axis of said optical element.

10. (Currently Amended) The apparatus of claim 6, wherein said particular location is selectable so as to produce a desired response from said optical element.

11. (Currently Amended) The apparatus of claim 6, wherein said redirecting mechanism is configured to redirect light along a path is substantially parallel to and offset from ~~an axis normal to~~ said center of rotation of said module.

12. (Currently Amended) A method of tuning an optical element, the method comprising:

mating a first end of a collimator with a second end of a filter module, the filter module including a filter having a plurality of responses, wherein the first end and the second end form a ball end joint such that the filter module can move with two degrees of freedom in the ball end joint and maintain contact with the collimator and wherein the filter has an axis that is offset from a center of rotation of the filter module; and

aligning the filter module by rotating ~~moving~~ the filter module within the ball end joint ~~in at least one of the two degrees of freedom~~ about the center of rotation to select a desired response from the plurality of responses.

13. (Currently Amended) The method of claim 12, wherein aligning the filter module comprises redirecting light along a path offset from ~~an axis formed by a~~ the center of rotation of said collimator.

14. (Previously Presented) A method for tuning an optical element comprising:

providing an optical element having a center of rotation;

providing a module including a filter, the filter having a plurality of responses and a center;

affixing an end of said optical element to an end of said module such that said center of said filter is offset from said center of rotation of said optical element, wherein the end of the optical element has a concave surface that fits with a convex surface of the end of the module to form a ball end joint between the optical element and the module;

applying incident light to said optical element, said incident light traveling along a path offset from said center of rotation; and

selecting a predetermined response by performing at least one of (a) rotating said module about said center of rotation and (b) adjusting a plane formed by a face of the filter with respect to the center of rotation by sliding the module within the ball end joint until the predetermined response is achieved.

15. (Previously Presented) The method of claim 14, wherein said act of rotating including the act of selecting one of said plurality of responses as the predetermined response.

16. (Currently Amended) An apparatus for tuning an optical element comprising:

module means for rotating about a center of rotation;

optical means including a filter, supported by said module means, for responding to an incident light and producing a plurality of responses, said optical means having a predetermined response at a position offset from said center of rotation, wherein an end of the module means forms a ball end joint with an end of the optical means such that the filter can be moved with respect to the center of rotation while maintaining contact between the optical means and the module means;

means for applying incident light to said optical means, said incident light traveling along a path offset from said center of rotation; and

means for rotating said module about said center of rotation ~~and for sliding the module means in the ball end joint~~ until a desired response from said optical means to said incident light is achieved.

17-20. (Cancelled)

21. (Currently Amended) A method for tuning an optical element comprising:

applying an incident light beam from a source to a first location on an optical element having a specified response to the light beam at the first location, the optical element having an end to form a ball end joint with the source, the first location offset from a center of rotation of the source; and

positioning the optical element by at least rotating ~~moving~~ the optical element about the center of rotation using the ball end joint so that the light beam is incident at a second location on the optical element having a desired response other than the specified response.

22. (Previously Presented) The method of claim 21, wherein the optical element comprises a filter.

23. (Previously Presented) The method of claim 22 wherein the specified response comprises a center wavelength of the filter.

24. (Currently Amended) An optical element that can be tuned to a particular response, the optical element comprising:

a filter having a plurality of responses to an incident light beam, the filter having a face;

a housing that contains the filter, wherein the filter is positioned within the housing such that a center of the filter does not coincide with a center of rotation of the housing such that the incident light beam can be incident on a plurality of locations of the filter as the housing rotates about the center of rotation, the housing having a convex shaped end that forms a joint with a light source having a concave shaped end such that the filter can be rotated about a center of rotation of the light source and such that the face of the filter can be tilted with respect to the light source, wherein the center of rotation of the light source substantially coincides with the center of rotation of the housing.

25. (Previously Presented) An optical element as defined in claim 24, wherein the light source is a collimator and the joint is a ball end joint.

26. (Cancelled)